

DW-SRF 2010 Project

Proposal for Green Project Reserve Methodology using format from EPA's • June 22, 2009 guidance for GPR business cases

ESTIMATE OF VALUE OF WATER LOSS WORKSHEET

1 Date:	20-Jul-10
2 PWSID #	ME00090290
3 System	Calais Water Department
4 Project Name	Main Replacement Project
5 Location	German, Spring, Beech, Brooks, Midland
6 Engineering Consultant	Olver Associates
7 Existing Main size, age, and type	2" Galvanized iron
8 Proposed New Water Main size and type	8" Ductile Iron cement lined pipe
9 New Main Pipe Length	2,600
10 Estimated Project Cost	\$ 695,000

Note: Data from Utilities Annual Report (2008) to Maine Public Utilities Commission

Page	Line	Description	Units	2008
W-12	15	Total Production Water	gallons per year	128,122,000
W-12	17	Total Revenue Water	gallons per year	89,738,000
W-12	19	Total Non-Revenue Water	gallons per year	38,384,000
W-12	19	Percent Non-Revenue Water		30%
W-12	22	Utility Usage - treatment	gallons per year	3,344,000
W-12	23	Utility Usage - hydrant flushing	gallons per year	3,044,000
W-12	14	Utility Usage - bleeders	gallons per year	-
W-12	26	Utility Usage - all other (running customers & blow-offs)	gallons per year	-
W-12	30	Fire Protection	gallons per year	10,932,000
W-12	31	Main Breaks	gallons per year	13,413,000
W-12	35	Flushing Mains	gallons per year	165,000
W-12	36	Total Accounted for Non-Revenue Water	gallons per year	30,898,000
W-12	37	Total Unaccounted Non-Revenue Water	gallons per year	7,486,000
		Estimated Water Loss From ALL Breaks, Leaks, & Bleeders	gallons per year	21,064,000
		<i>(PUC Accounts total of lines 14, 26,31,35 and 37)</i>		
		% of Water Loss of Total Production Water		16%
		<i>(PUC Lines 14,26,31,35,37 divided by Line 15)</i>		
W-9	9	Total Transmission Mains	feet	2,630
W-9	23	Total Distribution Mains	feet	119,250
		Total Mains in Service	feet	121,880
			miles	23
		<u>Estimated Distribution System Losses:</u>		
		Loss Water per mile of pipe	gallons per mile per year	912,520
		Loss Water per foot of pipe per year	gallons per foot per year	173
		Loss water per foot of pipe per day	gallons per foot per day	0.47
		<u>Water loss will vary with age of water main - assume Straight line projection as follows:</u>		
		0 to 25 year old pipe	0 % of Total Loss	gallons per mile per year -
		26 to 50 year old pipe	10% of Total Loss	gallons per mile per year 91,252
		51 to 75 year old pipe	30% of Total Loss	gallons per mile per year 273,756
		over 75 year old pipe	60% of Total Loss	gallons per mile per year 547,512
			All Loses:	912,520
		Age of Main to be replaced	years	100
		Length of Main to be Replaced	mile	0.49
		CALCULATED WATER LOSS - FOR PROPOSED PROJECT	gallons per year	269,608
W-2	29c	Total PRODUCTION COST of Water	\$/year	\$ 434,840
W-12	15	Total Production Water	1,000 gallons per year	128,122
		Production Cost of Water	per 1,000 gallons	\$ 3.39
		PROJECTED ANNUAL VALUE of WATER LOSS	per year	\$ 915

Annual Savings	\$	915
PV Factor (uniform series present worth factor (1%, 75 years):	\$	52.587
Present Value of Savings over Economic life of pipeline:	\$	48,119
Project Cost	\$	695,000
PV Percent of Project Cost:		6.9%

ESTIMATED % Green	6.9%
\$ Amount Green	\$ 48,119